

Notice of Allowability

Application No.

10/707,403

Applicant(s)

GALLEGO HUGAS ET AL.

Examiner

Daniel Swerdlow

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 21 February 2006.
2. ☒ The allowed claim(s) is/are 3-6 and 14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Bruce E. Harang, reg. no. 29,720 on 18 April 2006.

The application has been amended as follows:

In the claims, Claim 3 is amended to read as follows:

Claim 3 (Currently Amended): Method for canceling echoes and noises in environments with variable acoustic conditions and high feedback inside a vehicle for the purpose of permitting the establishment of a clear audible communication between the occupants of the different areas of said vehicle, the method comprising:

receiving an existing original speech signal (5) in at least a first microphone (1) located in a first site;

generating an electric signal from said original speech signal using an assembly comprising several A/D - D/A converters, amplifiers and filters;

receiving said electric signal in at least one speaker (3) to transform said electric signal (13) into an acoustic signal (7) susceptible to being received by said first microphone (1) together with a new original speech signal (5) and noise (9), said new original speech signal and noise existing near said first site;

removing feedback by applying an operative acoustic echo canceller system (15) using said electric signal (13) which will be reproduced, and an electric signal (10) supplied by the microphone and A/D converter means, the signal (10) comprising the feedback of said reproduced acoustic signal (7), a new existing, original speech signal (5) and a noise (9) seized by the microphone; and

carrying out additional filtering of an electric output signal (11) of said acoustic echo canceller system (15), resulting from the treatment of said signal (10) sent by the microphone (1), the additional filtering comprising a two-stage Wiener filter (16), coupled in cascade, a first of them (22) applied to the elimination of a possible residual echo not suppressed by the echo canceller system (15) and a second stage (23) intended to suppress the noise components (9) of the interior present in said signal (11), the calculation of the frequency response of both stages (22, 23) being carried out by a spectral power density estimate of said residual echo and by a spectral power density estimate of said noise present in said signal (11).

2. The following is an examiner's statement of reasons for allowance:
3. Applicant has amended the independent claims to include limitations that result in allowability for reasons stated in the prior Office action.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Drawings

4. The drawings were received on 21 February 2006. These drawings are acceptable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Swerdlow
Primary Examiner
Art Unit 2615

ds
19 April 2006